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The Future Is MFOQA

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All Army aviators and leaders should be familiar with Military Flight Operations Quality Assurance, an important futures program that promises to make a significant, positive impact on Army Aviation over the next decade. MFOQA was mandated by the Department of Defense for all services and is rapidly propagating through commercial and civil aviation.

So, what exactly is MFOQA? It's a predictive program that analyzes flight data to enhance operational readiness, training, maintenance and safety (OTMS, and now more commonly known as MOST) achieved through digital data download from aircraft. A fully integrated MFOQA capability will provide diagnostics and prognostics to enhance MOST at company, battalion, brigade and echelons above brigade. MFOQA capabilities are under the broader aircraft data exploitation capability concept, which will exploit the rapid proliferation of aircraft digital source collectors such as maintenance data recorders, flight data recorders, digital cockpit voice recorders and health and usage monitoring systems.

ADEC is an enabler for instituting digital aviation logistics and condition-based maintenance. It also could support the common logistics operating environment protocols and standards for moving aircraft data detailing Army Aviation's needs to collect, store, analyze and act upon such data to support the effectiveness of joint and combined operations. This process involves hardware, software and process changes at the platform, unit and higher echelons (e.g., U.S. Army Combat Readiness Center, U.S. Army Aviation and Missile Command, Program Manager-Aviation Engineering Directorate, etc.) to better leverage digital data currently available and expand the types of data collected from our aircraft.

CBM, also known as predictive maintenance, is the set of maintenance actions taken to prevent or avoid the consequences of functional failure. The Army vision for CBM is to establish enterprise-wide predictive maintenance and anticipatory logistics capability by developing information exchange requirements for the Army integrated logistics architecture and connecting self-reporting/self-diagnosing platforms to the logistics enterprise to improve operational availability, mission capability and combat power.

In practical terms, what does MFOQA entail? First and foremost, MFOQA means that by the end of fiscal 2013 the Army should have a suite of DSCs on all Army aircraft. That suite will be comprised of a sufficient number and type of digital collectors to record aircrew communications, flight data, aircraft performance and, where applicable, digital video. DSCs will also have the capability to record engineering data for use by aircraft and component program and product managers.

Secondly, a system will enable MFOQA to collect and transmit digital aircraft data, although the type and range to be collected and transmitted is yet to be determined. The Army also hasn't yet decided how that data will be transmitted. For example, it's possible to transmit data over a wireless network from the aircraft through the unit into the Army network. However, wireless transmissions, while less labor intensive, are also more limited than aircraft-side downloads in terms of volume of transmitted data and information security. Nonetheless, aviation units will possess the capability to download digital aircraft data for their use and pass into the Army network for other users.

Perhaps most important to commanders, MFOQA will provide the ability to sample and analyze aircraft data at the brigade level and below. That ability will allow commanders and trainers to tailor aircrew training based upon aircrew performance downloaded from aircraft after missions. For example, a commander could, through modeling, review a certain pilot's last five night vision system training flights to determine how the pilot's performance fares against the training standards for NVS flight. In another example, commanders could use data downloaded from flights to assist in the after-action review process or to determine lessons learned from near misses. One very promising capability offered by MFOQA is for trainers to fly and record "gold-standard model" maneuvers and, by review, virtually place every member of the unit in the cockpit with an instructor pilot while he or she is demonstrating a given maneuver to standard.

In the area of safety and accident prevention, the Army is already reaping some of the benefits of MFOQA. AH-64Ds and limited numbers of other aircraft types are by now outfitted with MDRs, HUMS and, in some cases, CVRs. These devices are fielded in concert with crash-survivable memory units that have been of great utility in conducting post-

crash forensic analyses of Army Aviation accidents. When these devices have been present on Army aircraft, the USACRC has been successful in helping accident investigators reconstruct portions of the flight to possibly determine accident causes or review aircraft performance factors. MFOQA will further this capability by allowing commanders to be more proactive in preventing accidents, compared to our present limited capability to conduct reactive accident analysis.

The U.S. Army Aviation Warfighting Center is leading the Army effort to determine how the MFOQA and ADEC programs will be developed. The Program Executive Office–Aviation and USACRC, along with the Army Staff and other Army agencies, are working in concert with USAAWC. Through our combined efforts, the Army is currently staffing an MFOQA capability development document. USAAWC will move forward this year to further develop the ADEC program and to obtain a fully staffed and approved initial capabilities document as part of the joint capability integration and development system process.

FYI

It was brought to our attention that the pull-out poster in April's Knowledge contained an editing error. We apologize for this mistake, especially to the Soldier in the photo, and we appreciate the feedback from our readers that brought this error to our attention. Your feedback allows us to continually improve our publication to better meet the needs of our Army Team. Keep it coming! Send your comments and recommendations to knowledge@crc.army.mil. Army Safe – Army Strong!